PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference M861-PCT	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/JP03 /15554	International filing date *(day/month/year)* 04.12.2003	Priority date *(day/month/year)* 16.07.2003
International Patent Classification (IPC) or national classification and IPC Int.Cl ⁷ B21H 3/04		
Applicant REX INDUSTRIES CO., LTD		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:

   a. ☐ a total of _____ sheets, as follows:

   ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

   ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

   b. ☐ a total of (indicate type and number of electronic carrier(s))_____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

   ☑ Box No. I Basis of the report
   ☐ Box No. II Priority
   ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   ☐ Box No. IV Lack of unity of invention
   ☑ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   ☐ Box No. VI Certain documents cited
   ☐ Box No. VII Certain defects in the international application
   ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 01.06.2004	Date of completion of this report 08.02.2005
Name and mailing address of the IPEA/JP **Japan Patent Office** 3-4-3, Kasumigaseki, Chiyoda-ku, Tokyo 100-8915, Japan	Authorized officer KAWAMURA Kenichi 3P 9625 Telephone No. +81-3-3581-1101 Ext. 3363

Form PCT/IPEA/409 (cover sheet) (January 2004)

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/JP03 /15554

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1(b))
- ☐ publication of the international application (under Rule 12.4)
- ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

☑ the international application as originally filed/furnished

☐ the description:

pages _____ as originally filed/furnished
pages* _____ received by this Authority on _____
pages* _____ received by this Authority on _____

☐ the claims:

pages _____ as originally filed/furnished
pages* _____ as amended (together with any statement) under Article 19
pages* _____ received by this Authority on _____
pages* _____ received by this Authority on _____

☐ the drawings:

pages _____ as originally filed/furnished
pages* _____ received by this Authority on _____
pages* _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (specify): _____
- ☐ any table(s) related to sequence listing (specify): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (specify): _____
- ☐ any table(s) related to sequence listing (specify): _____

* *If item 4 applies, some or all of those sheets may be marked "superseded."*

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/JP03 /15554

Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	1-7	YES
	Claims		NO
Inventive step (IS)	Claims	3,5,6	YES
	Claims	1,2,4,7	NO
Industrial applicability (IA)	Claims	1-7	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Document 1: JP 2003-126937 A (REX INDUSTRIES CO., LTD.) 2003.05.08, whole document, (family none)
Document 2: JP 10-34270 A (REX INDUSTRIES CO., LTD.) 1998.02.10, page3, paragraph [0014], (family none)

[Claim 1]
Document 1 indicates these two inventions,
(Invention 1)
An automatic releasing-type rolling head for forming a tapered thread on a pipe, comprising:
(a) a cylindrical housing with front and rear closures; shaft bearing plates which are slidably supported in a plurality of guide grooves radially provided on inner surfaces of the front and rear closures of the housing, said shaft bearing plates being provided on their outer surfaces in the radial directions with oblique surfaces;
(b) thread rolling rollers rotatably supported by the shaft bearing plates through roller shafts; a cam ring which rotates in the housing and has cam oblique surfaces opposed to the oblique surfaces of the shaft bearing plates;
(c) a lever which abuts, at its oblique surface, against a cam member to prevent movement thereof in association with the cam ring; and an abutment member which is pressed and moved by a thread-rolled pipe,
(Invention 2)
An automatic releasing-type rolling head for forming a tapered thread on a pipe, comprising:
(a) a cylindrical housing with front and rear closures;
(b) thread rolling rollers rotatably supported by the shaft bearing plates through roller shafts;
(c) a lever which abuts, at its oblique surface, against a cam member to prevent movement thereof in association with the cam ring;
(d) and an abutment member which is pressed and moved by a thread-rolled pipe,
(e) wherein the rolling load which acts on the rolling rollers during a thread-rolling operation is reduced due to contact friction in the course of transference of the rolling load to the cam oblique surface of the cam member and to the oblique surface of the lever; when the to-be-rolled pipe is thread-rolled to a predetermined length the oblique surface of the lever is gradually moved away from the cam member moving in association with the cam ring,

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: V

in association with the movement of the abutment member whereby the cam ring is rotated due to the rolling load so that the shaft bearing plates and the thread rolling rollers are moved in radial and outward directions and released-from the to-be-rolled pipe.

And it is obvious for the person skilled in the art to constitute like invention at Claim 1 with the application of the point (e) of invention 2 to the invention 1.

[Claim 2]
Document 1 also indicates that a plurality of radial guide grooves whose bottoms are parallel to a plane perpendicular to the axis, are provided in the inner surface of the front closure of the housing; guide grooves identical in dimension to the guide grooves of the front closure, are provided in the inner surface of the rear closure the shaft bearing plates are provided with shaft bearing holes for supporting the roller shafts which are slidably fitted in the guide grooves of the front closure and the rear closure and which are inserted in the center holes of he discontinuous circumferential groove type rolling rollers, said shaft bearing holes being adapted to support the discontinuous circumferential groove type rolling rollers deviated in the direction of the width of the guide grooves of the front closure or the rear closure, in a position and at an angle corresponding to the lead angle of the thread of the to-be-rolled pipe.

[Claim 4]
The portion of the abutment member pressed and moved by the thread-rolled pipe that is to abut against the to-be-rolled pipe, has a circular contour which enables the abutment member to be in contact with the front end surface of the to-be-rolled pipe substantially over the entire periphery is indicated by Document 2, and it is obvious for the person skilled in the art to apply this point to invention 1 indicated by Document 1.

[Claim 7]
The point that a scraper for cutting the outer diameter portion of the to-be-rolled pipe is movably provided at an insertion opening of the housing for the to-be-rolled pipe, said scraper being provided with a cutting blade and an inner diameter portion, for guiding the to-be-rolled pipe, which are integrally molded is also indicated by Document 1.